Universitas Indonesia Library >> UI - Disertasi Membership

PREDIKSI KEPARAHAN RESORPSI TULANG ALVEOLAR: ANALISIS PERAN FAKTOR RISIKO SOSIODEMOGRAFIS, LINGKUNGAN, KLINIS, RADIOGRAFIK, HORMON DAN GENETIK PADA PEREMPUAN USIA 50-75 TAHUN = PREDICTION OF EFFICIENCY OF ALVEOLAR BONE RECEPTION: ANALYSIS OF THE ROLE OF SOCIODEMOGRAPHIC, ENVIRONMENTAL, CLINICAL, RADIOGRAPHIC, HORMONE AND GENETIC RISK FACTORS IN FEMALE 50-75 YEARS OLD

Susi R. Puspitadewi, author

Deskripsi Lengkap: https://lib.ui.ac.id/detail?id=20509110&lokasi=lokal

---

Abstrak

Perawatan gigi tiruan pada lansia terutama lansia perempuan usia 50-75 tahun sering mengalami kegagalan, karena adanya resorpsi tulang alveolar berlebihan yang menyebabkan gigi tiruan longgar dan tidak stabil. Berbagai penelitian penyebab terjadinya resorpsi tulang telah banyak dipublikasi, di antaranya yang terkait faktor sosiodemografis, klinis, dan lingkungan, namun penelitian terkait dengan hormon (PTH, FSH) dan faktor genetik (polimorfisme gen PTH dan PTHR1) belum banyak diteliti.

Tujuan: Memperoleh indeks tingkat keparahan resorpsi tulang alveolar mandibula untuk memprakirakan tingkat keparahan resorpsi tulang alveolar mandibula pada pascamenopause yang memerlukan perawatan gigi tiruan. Subjek penelitian adalah perempuan pascamenopause usia 50-75 tahun yang bertempat tinggal di kelurahan Kenari dan Paseban Jakarta Pusat.

Metode: Menggunakan alat ukur kuesioner indeks kepadatan tulang mandibula tervalidasi, pemeriksaan klinis, pemeriksaan serum darah dengan ELISA, dan teknik PCR RFLP untuk menganalisis gen, dan evaluasi radiograf panoramik untuk menilai kualitas tulang kortikal mandibular. Selanjutnya dilakukan penelitian potong lintang untuk mencari faktor-faktor risiko yang paling berperan terhadap keparahan resorpsi tulang alveolar mandibula.

Hasil: Penelitian ini menunjukkan tidak terdapat hubungan antara faktor sosiodemografis, klinis, dan lingkungan, serta ditemukan sebanyak 87,25% subjek dengan kadar PTH <65pg/mL, dan adanya korelasi yang signifikan antara kadar PTH dengan resorpsi tulang alveolar mandibula (p<0,05). Kadar PTH ≥65pg/ml bertendensi terhadap tingkat keparahan resorpsi tulang alveolar. Tidak ditemukan adanya korelasi antara kadar PTH dengan genotip dan alel polimorfisme gen PTH pada posisi rs6254 di intron dua (p>0,05). Tidak terbukti adanya korelasi antara polimorfisme gen PTH dengan keparahan resorpsi tulang alveolar mandibula (p>0,05), sedangkan pada polimorfisme gen PTHR1 pada posisi promoter tiga ditemukan bahwa pada pengulangan (AAAG)6 memiliki kualitas tulang yang lebih rendah dan resorpsi tulang tinggi walaupun tidak ditemukan adanya korelasi antara polimorfisme gen PTHR1 dengan keparahan resorpsi tulang (p>0,05). Hasil uji multivariat memperlihatkan kadar FSH, PTH dan kualitas tulang alveolar mandibula berperan terhadap terjadinya keparahan resorpsi tulang alveolar mandibula (p<0,05). Penelitian

ini memperoleh dua model penskoran indeks prediksi keparahan resorpsi tulang alveolar mandibula. Model satu dengan faktor PTH, FSH dan kualitas tulang mandibula mempunyai sensitifitas 68,29%, spesifisitas 56,48%, dengan daerah di bawah kurva (AUC) 0,675 dapat digunakan jika pada penerapan model dua tidak terlihat faktor yang berperan. Model dua terdiri dari FSH dan kualitas tulang, dengan sensitivitas 68,29% dan spesifisitas 58,33% serta area daerah di bawah kurva (AUC) 0,649.

Kesimpulan: indeks prediksi resorpsi tulang alveolar mandibula yang terdiri atas analisis kualitas tulang mandibula, kadar FSH dan PTH dapat digunakan untuk memprediksi tingkat keparahan resorpsi tulang alveolar mandibula. Dengan demikian diharapkan kegagalan perawatan gigi tiruan pada perempuan kelompok usia 50-75 tahun yang berisiko osteoporosis dapat diatasi.
<hr />
Denture treatment in the elderly, especially in women aged 50-75 years, often experience failure, due to excessive alveolar bone resorption which causes loose and unstable dentures. Various studies have been published on the causes of bone resorption, including those related to sociodemographic, clinical, and environmental factors, but research related to hormones (PTH, FSH) as well as genetic factors (PTH and PTHR1 gene polymorphisms) have not been much studied.

Purpose: This study aims to obtain a mandibular alveolar bone resorption severity index to predict the severity of mandibular alveolar bone resorption in the postmenopausal period that requires denture treatment. The subjects of the study were postmenopausal women aged 50-75 years who lived in the villages of Kenari and Paseban, Central Jakarta.

Methods: The first step this study were conducted by using a validated mandibular bone density index questionnaire, clinical examination, blood serum examination by ELISA, and PCR- RFLP techniques to analyze genes, and panoramic radiographs evaluation to assess the quality of mandibular cortical bone. A cross-sectional study to look for the risk factors that most contribute to the severity of mandibular bone resorption were then conducted at the second step of this study.

Results: This study showed no relationship between sociodemographic, clinical, and environmental factors, and found as many as 87.25% of subjects with PTH levels <65pg / ml, as well as a significant correlation between PTH levels with resorption of the mandibular alveolar bone (p <0.05). The PTH level ≥65pg / ml has a tendency towards the severity of alveolar bone resorption, however, there was no correlation between PTH levels with genotype and PTH gene polymorphism alleles at position rs6254 in intron two (p> 0.05). There is no proven correlation between PTH gene polymorphism with the severity of mandibular alveolar bone resorption (p> 0.05). In the PTHR1 gene polymorphism of the promoter position three it was found that the repetition (AAAG)6 had lower bone quality and higher bone resorption although no correlation was found between PTHR1 gene polymorphisms and the severity of bone resorption (p> 0.05). Multivariate analysis showed that the levels of FSH, PTH and mandibular alveolar bone quality were contributed to the severity of mandibular alveolar bone resorption (p <0.05). From this study two predictive index scoring models of the severity of mandibular alveolar bone resorption were obtained. The model one with factors of PTH, FSH and quality of mandibular bone, has 68.29%sensitivity and 56.48% specificity, with the area under the curve (AUC) 0.675. Model two has a sensitivity of 68.29%, and specificity of

58.33% with the area under the curve (AUC) is 0.649. The model one could be used if in the application of model two does not show factors that play a role.

Conclusion: the predictive index of mandibular alveolar bone resorption consisting of analysis of mandibular bone quality, FSH and PTH levels can be used to predict the severity of mandibular bone resorption. It is hoped that the failure of denture treatment in women aged 50-75 years at risk of osteoporosis can be overcome.